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This study of the Basic Skills Program (to prepare the student for enrollment in a regular course) was undertaken by the Student Service Center at the request of the Language Arts and Mathematics Departments. Its objectives were to examine (1) performance of students in the program, (2) student-measured achievement after one semester, and (3) placement criteria. The program was then evaluated for continuation or modification. The conclusions drawn were: (1) inadequate student records handicapped curriculum study and the conduct of needed research, (2) curriculum choice of low-ability students was unrealistic, indicating a need for better counseling, (3) foreign students require long-term remediation in communication skills, (4) the program did not prepare many students for regular course work, as their deficiencies were too long-standing for such a brief period of remedial instruction, (5) since the program was of doubtful value both educationally and financially, resources could be diverted to clinical analysis, more individual instruction, consultation, and assistance to occupational instructors, (6) placement criteria were valid, (7) for many students short-term vocation-technical courses were needed, requiring minimum language and mathematical skills, (8) students who benefited from the program were encouraged to transfer into suitable curriculums, and (9) curriculum study should be continuous for better use of educational and financial resources. (HH)

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UNIVERSITY OF HAWAII COMMUNITY COLLEGE SYSTEM

Kapiolani Community College

EVALUATION OF THE BASIC SKILLS PROGRAM

Fall Semester, 1967

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UNIVERSITY OF CALIF.
LOS ANGELES

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INFORMATION

JC680351

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June 30, 1968

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THE BASIC SKILLS PROGRAM EVALUATION

At the request of the Language Arts and the Mathematics Departments, staff of the Student Services Center was asked to evaluate the Basic Skills Program. A proposal was made in November, 1967, and approved by the Departments, the Dean of Instruction, and the Provost. Approximately $700 was allocated for the study.

The objectives, within definite limitations, were to study:

a. Course performance of students assigned to the Basic Skills Program,

b. Some characteristics of student measured achievement after one semester of remedial instruction, and

c. The placement criteria.

In essence, the evaluation sought to secure a variety of data relative to the program with the purpose of supporting its continuation or modification.

Procedures

Staff of the Language Arts and Mathematics Departments reviewed available standardized tests and selected criterion measures of achievement. The instruments chosen by the Language Arts Department were the California Survey of Language Achievement and the Cooperative English Test, Reading Comprehension. The Mathematics Department selected the California Mathematics Test, Advanced. An alternate form of the Cooperative School and College Ability Test was used to study change in estimated ability.

At the end of the Fall semester, the alternate measure of academic ability and the selected measures of achievement were administered.

Test administration and data analysis were the responsibility of the Student Services Center. All data were manually processed.

Basic data derived from the evaluation were reviewed by the Language Arts and Mathematics Departments and program-related interpretation was made. The final report was prepared cooperatively for submission to the Provost.

GENERAL DESCRIPTION AND OBJECTIVE OF THE BASIC SKILLS PROGRAM

The Basic Skills Program was initiated at the beginning of the Fall Semester, 1967: "The main objective of the basic courses is to prepare the student for enrollment in a regular course."[1/]

It was designed to provide intensive remedial instruction in language arts and mathematics to students whose estimated ability in these subjects was sufficiently low to preclude probable failure or minimal success in their major curriculum requirements. Justification for the program was based on instructors' judgment, data revealing a rate of failure sufficient to course concern, incidence of course withdrawal, and other known or suspected factors. The criterion for student assignment to the program was performance on the Cooperative School and College Ability Test. Students whose scores were at or below the tenth percentile on the Verbal section of the test were expected to enroll in English 1 (English Fundamentals) and English 2 (Developmental Reading). Students whose score was at or below the tenth percentile or the Quantitative section of the test were expected to enroll in Math 1 (Basic Mathematics).

The schedule of courses for the Fall Semester, 1967, provided eight classes of English 1 (English Fundamentals), eight classes of English 2 (Developmental Reading), and three classes of Math 1 (Basic Mathematics). Classes met daily for one period. Eight language arts instructors and two mathematics instructors were assigned to the program.

[1/] From: Plan for Basic Skills Program, 1967.

RESULTS

Table 1 indicates the program course/course-grouping enrollment and sample data.[1/] Approximately 1,100 first-year students were enrolled in September, 1967, and 354, or about one-third, were assigned to Basic Skills courses, predominantly English. As is noted, also, in Table 1 evaluation data were complete for only 193 of the 354 students.

There were twenty-seven foreign students in the program. The foreign students were treated separately on the basis of their diverse educational background. The length of residence of the students in the U. S. varied from less than one year to ten years. Eleven of the 27 graduated from a high school in Hawaii.

At the end of the semester it was noted that of the 354 students assigned to the program 108 had no evaluation data. A detailed search of individual records was necessary. When withdrawals, withdrawal-failures, and non-enrollees are combined, it appears that of the 108 students about 12 or 10 percent actually completed the semester with a passing grade in their basic skills subjects.

Table 2 indicates the elected curriculum majors of the students in the sample groups. It would appear that some choices are unrealistic, particularly where the chosen program major requires a loading of skills in an area in which the student is securing remedial assistance, e.g. 38 Secretarial majors in one or more remedial English courses. On the other hand, each student was required at the time of application to the school to choose from the curriculum majors available and the choice may have been made to satisfy a requirement rather than on the basis of information and self-understanding. Implications for improved guidance of these students are clear.

[1/] Two of the groups, VI (English 1 and Math 1) and VII (English 2 and Math 1), were eliminated from further analysis because of size.

TABLE 1

Enrollment and Evaluation Summary, Basic Skills Students

Fall Semester, 1967

Group	Enrollment			Evaluation			
	Scheduled	Added	Total	FS 1/	Not Evaluated 2/	Incomplete	Completed
	N	N	N	N	N	N	N
I	34	0	34	2	12	2	18
II	71	16	87	7	27	2	51
III	36	0	36	1	10	6	19
IV	44	3	47	5	17	4	21
V	126	3	129	10	36	3	80
VI	19	0	19	1	5	9	4
VII	2	0	2	1	1	0	0
TOTAL	332	22	354	27	108	26	193

Group Identification	Credit Hours
I - English 1, English 2, Math 1	(9)
II - English 1	(3)
III - English 2	(3)
IV - Math 1	(3)
V - English 1, English 2	(6)
VI - English 1, Math 1	(6)
VII - English 2, Math 1	(6)

1/ Foreign Students combined as a separate group for analysis
2/ Includes withdrawals, withdrawal-failures, non-enrollees, and others

TABLE 2

Curriculum Majors by Group Completing Evaluation

Fall Semester, 1967

Group	N	S	ST	CT	A	B	P	CO	KP	DA	HR	SM
I	18	3		9	1		1	2	2			
II	50	9		7	4		2	1	6		21	
III	19	4	1	2	7	1	1	1	1		1	
IV	21	1	2	3	3		2		3	3	3	1
V	79	22	1	12	20	5	5	3	9			2
VI	4	—	—	2	—	—	—	—	—	—	2	—
TOTAL	191	39	4	35	35	6	11	7	21	3	27	3

S - Secretarial
ST - Stenographic
CT - Clerk Typist
A - Accounting
B - Bookkeeping
P - Programmer
CO - Computer Operator
KP - Key Punch
DA - Dental Assisting
HR - Hotel & Restaurant
SM - Sales & Mid-Management

Tables 3-8 summarize the course performance of the various sample groups and their grade point average for the Fall Semester, 1967.

In Table 3 it is noted that the 18 students (Group I) for whom maximum remedial assistance was provided failed to achieve well. One-half of the students in English 1; sixty-one percent of the students in English 2; and fifty percent of the students in Math 1 "failed" (a grade of "C" was required as a pre-requisite, in most cases, to advanced courses, e.g. English 20 and Math 20). The measure of success in the limited scope of other courses attempted by this group was comparable to success in the basic skill courses. A tentative assumption might be made that weakness in both verbal and quantitative ability, as determined from placement testing, forecasts general inadequacy to do well even in remedial-type courses, as generally taught. Other strategies would seem appropriate.

For Group II (English 1), Table 4, the achievement level was somewhat higher than for Group I. However, the marginal "C" was exceeded by only 12 of the 51 students. Twenty-five of the group were enrolled in the regular mathematics course, only six were successful.

Only 4 of the 19 students in Group III (English 2), Table 5, failed to achieve the required "C." In general, Group III appeared to perform well in other courses attempted.

In Table 6 it would appear that the 21 students in Group IV (Math 1) achieved well in mathematics and in other courses with the exception of English 20, the regular English course.

Group V (English 1 and English 2), Table 7, the largest of the sample groups, attained a relatively high level of performance. Only 14 percent in English 1 and 23 percent in English 2 did not achieve the minimum grade of "C."

The performance of foreign students is indicated in Table 8. In general, the level of performance compared favorably with that of the other basic skills students.

TABLE 3

Course Performance and Grade Point Average, Basic Skills:
Group I (English 1, English 2, Math 1)

Fall Semester, 1967

Courses	N	A		B		C		D		F		Mean GPA
		N	%	N	%	N	%	N	%	N	%	
English 1	18			1	6	8	44	8	44	1	6	1.50
2	18	1	6	2	11	4	22	10	55	1	6	1.55
Math 1	18			3	17	6	33	7	39	2	11	1.55
Orientation	17	4	23	10	59	3	18					2.47
Typing 20	14			3	21	5	36	6	43			1.78
21	2					1	50	1	50			1.50
PN 20	1									1	100	0.00
Speech 20	1							1	100			1.00
25	2	—	—	—	—	1	50	1	50	—	—	1.50
TOTAL	91	5	6	19	21	28	31	34	37	5	5	1.71

TABLE 4

Course Performance and Grade Point Average, Basic Skills:
Group II (English 1)

Fall Semester, 1967

Courses	N	A		B		C		D		F		W		I		Mean
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	GPA
English 1	51	1	2	11	22	26	50	8	16	3	6	1	2	1	2	1.88
Math 1	1											1	100			0.00
20	25					6	24	5	20	12	48	2	8			0.68
Orientation	28	15	54	10	36	2	7	1	3							3.39
Typing 20	11			4	36	4	36	2	18	1	10					2.00
21	12					6	50	2	17	2	17	2	16			1.17
22	1			1	100											3.00
Shorthand 20	3			1	33	1	33			1	33					1.66
21	1											1	100			0.00
Accounting 20	9	1	11			3	33	1	11	4	45					1.22
24	4	1	25	2	50	1	25									2.50
25	1	1	100													4.00
41	1	1	100													4.00
Off. Prac. 20	6			1	17	1	17	1	17	2	33	1	16			1.00
25	7					6	86			1	14					1.71
Gen. Bus. 20	3					2	66	1	33							1.66
	2					2	100									2.00
Speech 20	12	2	17	3	25	6	50	1	8							2.50
25	3			1	33	1	33			1	33					1.66
Humanities 21	11			1	9	8	72	1	9					1	9	2.00
Bus. Mach. 20	14			4	28	9	64	1	8							2.21
Soc. Sci. 25	1					1	100									2.00
30	1							1	100							1.00
BDP 20	2					1	50	1	50							1.50
26	2			1	50					1	50					1.50
Hotel & Rest. 20	17			4	24	11	64	1	6					1	6	2.05
21	5					4	80	1	20							1.80
30	7			4	57	1	14	2	29							2.00
31	6	1	17	1	17	3	50	1	16							2.33
32	4	1	25	2	50	1	25									3.00
40	6	—	—	6	100	—	—	—	—	—	—	—	—	—	—	3.00
TOTAL	257	24	9	57	22	106	41	31	12	28	11	8	4	3	1	

TABLE 5

Course Performance and Grade Point Average, Basic Skills: Group III (English 2)

Fall Semester, 1967

Courses	N	A		B		C		D		F		W		Mean GPA
		N	%	N	%	N	%	N	%	N	%	N	%	
English 1	2							1	50			1	50	0.50
2	19			5	27	10	52	4	21					2.05
20	3	1	33					2	66					2.00
21	1					1	100							2.00
Math 20	4			1	25	2	50			1	25			1.75
Orientation	14	7	50	6	42							1	8	3.28
Typing 20	3			1	33	1	33	1	33					2.00
21	5	1	20	1	20	3	60							2.60
Shorthand 20	3	1	33							2	66			1.33
21	3			3	100									3.00
Accounting 20	3	1	33			1	33	1	33					2.33
24	7			3	43	3	43	1	14					2.14
41	1							1	100					1.00
Off. Prac. 20	2					1	50			1	50			1.00
50	1					1	100							2.00
Gen. Bus. 21	2					2	100							2.00
39	2					2	100							2.00
Speech 20	4			1	25	3	75							2.25
25	3			3	100									3.00
Humanities 20	1					1	100							2.00
25	3					2	66					1	34	1.33
Bus. Mach. 20	7	1	14	3	43	3	43							2.71
Soc. Sci. 30	1					1	100							2.00
Sci. 21	1					1	100							2.00
SM 20	1					1	100							2.00
BDP 21	1					1	100							2.00
41	2					2	100							2.00
Hotel & Rest. 20	1					1	100							2.00
21	1					1	100							2.00
31	1	—	—	1	100	—	—	—	—	—	—	—	—	3.00
TOTAL	104	12	12	28	27	45	44	11	11	4	3	4	3	

TABLE 6

Course Performance and Grade Point Average, Basic Skills: Group IV (Math 1)

Fall Semester, 1967

Courses	N	A		B		C		D		F		W		Mean GPA
		N	%	N	%	N	%	N	%	N	%	N	%	
English 20	10	1	10			4	40	3	30	2	20			1.50
21	1					1	100							2.00
Math 1	21	3	14	7	33	9	43	2	10					2.52
Orientation	15	5	33	5	33	4	27					1	7	2.86
Typing 20	4					3	75			1	25			1.50
21	7			2	29	1	18	2	29	2	29			1.43
25	1							1	100					1.00
Shorthand 20	3					1	33			2	67			0.66
21	1	1	100											4.00
Accounting 20	3					2	67	1	33					1.66
21	1					1	100							2.00
Off. Prac. 20	3							3	100					1.00
Gen. Bus. 20	1			1	100									3.00
21	1							1	100					1.00
Speech 25	5					2	40	3	60					1.00
Humanities 20	1	1	100											4.00
21	1					1	100							2.00
Bus. Mach. 20	8			1	13	5	61			1	13	1	13	1.63
Soc. Sci. 25	3	1	33			2	67							2.66
30	1											1	100	0.00
Sci. 20	2					2	100							2.00
DA 20	3					3	100							2.00
Hotel & Rest. 20	2	2	100											4.00
21	1	1	100											4.00
30	1			1	100									3.00
31	1			1	100									3.00
40	1	1	100	—	—	—	—	—	—	—	—	—	—	4.00
TOTAL	102	16	16	18	18	41	40	16	16	8	8	3	2	

TABLE 7

Course Performance and Grade Point Average, Basic Skills: Group V (English 1 and English 2)

Fall Semester, 1967

Courses	N	A		B		C		D		F		W		I		Mean GPA
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	
English 1	80	5	6	15	19	48	60	9	11	2	3	1	1			2.12
2	80	4	5	25	31	32	40	17	21	1	2			1	1	2.15
Math 1	2									1	50	1	50			0.00
20	22	1	4	2	10	4	18	2	10	12	54	1	4			0.99
25	1	1	100													4.00
Orientation	74	36	49	24	32	8	11	3	4	1	1	2	2			3.17
Typing 20	29	2	7	10	34	12	41	4	14					1	4	2.26
21	26			8	31	10	38	5	19	3	12					1.19
Shorthand 20	10	2	20	1	10	3	30	1	10	2	20	1	10			1.80
21	2			1	50	1	50									2.50
Accounting 20	17			3	18	8	47	3	18	3	17					1.64
24	15	2	13	1	7	9	60	1	7			2	13			2.00
Off. Prac. 20	4			1	25			1	25	1	25	1	25			1.00
25	2					1	50					1	50			2.00
50	4	1	25	2	50	1	25									3.00
Gen. Bus. 20	1							1	100							1.00
21	1					1	100									2.00
39	2							2	100							1.00
Speech 20	12			4	33	4	33			3	25			1	9	1.66
25	1					1	100									2.00
Humanities 20	2					2	100									2.00
25	1			1	100											3.00
Bus. Mach. 20	29	1	4	5	17	21	72					2	7			2.00
Soc. Sci. 30	2			1	50	1	50									2.50
31	5							1	20	3	60	1	20			0.20
Sci. 21	2					2	100									2.00
SM 20	1					1	100									2.00
21	1			1	100											3.00
TOTAL	428	55	13	105	25	170	40	50	12	32	7	14	3	2		

TABLE 8

Course Performance and Grade Point Average, Basic Skills: Foreign Students

Fall Semester, 1967

Courses	N	A		B		C		D		F		W		Mean GPA
		N	%	N	%	N	%	N	%	N	%	N	%	
English 1	16			2	12	7	44	6	38	1	6			1.60
2	13			5	38	5	38	2	15			1	8	2.10
20	1			1	100									3.00
Math 1	7	1	15			3	43	1	14	1	14	1	14	1.60
20	7	1	14	1	14	3	43			2	29			1.90
Orientation	17	8	47	9	53									3.50
Typing 20	9	1	11	1	11	2	22	2	22	2	23	1	11	1.40
21	1					1	100							2.00
Shorthand 20	2									1	50	1	50	0.00
Accounting 20	5	1	20	1	20	2	40	1	20					2.40
24	1					1	100							2.00
Speech 20	7	1	14	3	43	1	14			2	29			1.70
25	2											2	100	0.00
BDP 20	1							1	100					1.00
21	1					1	100							2.00
Hotel & Rest. 20	4	1	25			1	25	2	50					2.00
21	4	1	25			1	25	2	50					2.00
30	2					2	100							2.00
31	1	1	100											4.00
32	2			1	50	1	50							2.50
Gen. Bus. 21	2					1	50	1	50					1.50
Bus. Mach. 20	2	—	—	—	—	2	100	—	—	—	—	—	—	2.00
TOTAL	107	16	15	24	22	34	32	18	17	9	8	6	6	

Table 9-14 present the scholastic ability and achievement data for the sample groups, separately.

As noted in Table 9, the difference between pre- and post-test measures of scholastic ability are significant at or beyond the .05 level of confidence. However, the actual mean score gain on the verbal measure was minimal after intensive remedial instruction; and, though the gain in quantitative score appears substantial, the level of performance rose comparatively little. Among the end-of-course achievement measures, the level of performance of the group was considerably below the grade level average for twelfth grade.

Table 10 indicates significant differences in the mean scholastic ability scores of Group II. However, the actual score gain was minor. Performance on the measures of achievement indicates a probable greater gain in lower-level language skills than in conceptualization.

There were no significant differences in the pre- and post-testing comparisons of scholastic ability for Group III (English 2), Table 11. Again, the group having remedial instruction in developmental reading appeared not to have attained a substantially high level of performance in more complex language skills.

From Table 12 it would appear that students having remedial instruction in basic mathematics made substantial gain. Test comparisons were significant. Yet, inspection of the achievement measures would seem to point to gain in manipulative skill in mathematics rather than in the more demanding problem-solving skills. A "loss" in verbal ability was observed.

Group V (English 1 and English 2), Table 13, appears to be somewhat similar to Group I when pre- and post-test verbal scores are compared. Among the language achievement measures it would also appear that the acquisition of lesser language skills, such as spelling, was greater than for higher order skills, such as level of comprehension or reading speed.

Foreign student performance as noted in Table 14 was not substantial. Continued deficiencies are indicated, as might be expected. The data point to probable long-term remediation.

TABLE 9

Pre-and Post-Test Results and End-Of-Course Test Results for Group I (English 1, English 2, and Math 1)

Fall Semester, 1967

Test	N	Mean	(%ile)	(Gr. Pl.)	SD	SEm	Diff.
SCAT 1A-Verbal	18	14.05	(4)		2.84	.68	2.220*
SCAT 1B-Verbal	18	14.27	(5)		5.12	1.24	
SCAT 1A-Quantitative	18	11.83	(6)		3.11	.75	8.122**
SCAT 1B-Quantitative	18	24.33	(15)		6.67	1.62	
SCAT 1A-Total	18	25.88	(7)		4.86	1.17	4.590**
SCAT 1B-Total	18	38.61	(16)		10.25	2.48	
Survey of English Achievement[1/]							
English	18	62.44	(5)	(8.9)	6.48		
Spelling	18	14.50	(15)	(10.2)	5.11		
Cooperative English Test, Reading Comprehension							
Vocabulary	18	19.05	(13)		5.74		
Level	18	12.50	(11)		3.17		
Speed	18	16.33	(9)		5.23		
California Mathematics Test (Adv.)[1/]							
Mathematics Reasoning	18	22.83	(2)	(7.3)	4.34		
A. Meanings	18	7.88		(7.3)	6.67		
B. Symbols, Rules & Equations	18	9.88		(7.3)	2.83		
C. Problems	18	5.05		(7.0)	1.84		
Mathematics Fundamentals	18	51.00	(20)	(9.7)	10.31		
D. Addition	18	11.88		(8.4)	3.84		
E. Subtraction	18	13.33		(9.5)	2.52		
F. Multiplication	18	13.27		(11.3)	2.66		
G. Division	18	13.05		(11.0)	3.70		
Total Mathematics	18	78.84	(10)	(9.0)	12.98		

1/ Percentile and Grade Placement Norms--Twelfth Grade, Publisher

* Sig. at .05 level of confidence
** Sig. at .01 level of confidence

TABLE 10

Pre-and Post-Test Results and End-Of-Course Test Results for Group II (English 1)

Fall Semester, 1967

Test	N	Mean	(%ile)	(Gr. Pl.)	SD	SEm	Diff.
SCAT 1A-Verbal	51	14.18	(4)		3.95	.55	
							3.39**
SCAT 1B-Verbal	51	16.18	(10)		4.59	.64	
SCAT 1A-Quantitative	51	24.50	(23)		3.59	.50	
							23.60**
SCAT 1B-Quantitative	51	28.23	(27)		4.11	.58	
SCAT 1A-Total	51	38.51	(6)		9.16	1.29	
							20.56**
SCAT 1B-Total	51	44.41	(21)		10.72	1.51	
Survey of Language Achievement (Adv.)[1/]							
English	51	65.18	(12)	(9.5)	12.19		
Spelling	51	16.69	(34)	(11.4)	5.29		
Cooperative English Test, Reading Comprehension							
Vocabulary	51	19.00	(17)		5.49		
Level	51	13.49	(11)		9.93		
Speed	51	16.69	(9)		5.26		

1/ Percentile and Grade Placement Norms--Twelfth Grade, Publisher

** Sig. at .01 level of confidence

TABLE 12

Pre-and Post-Test Results and End-Of-Course Test Results for Group III (English 2)

Fall Semester, 1967

Test	N	Mean	(%ile)	(Gr. Pl.)	SD	SEm	Diff.
SCAT 1A-Verbal	19	15.26	(6)		6.64	1.56	.275
SCAT 1B-Verbal	19	15.68	(10)		3.74	.88	
SCAT 1A-Quantitative	19	29.52	(39)		7.99	1.88	1.350
SCAT 1B-Quantitative	19	31.63	(39)		5.88	1.38	
SCAT 1A-Total	19	44.26	(16)		11.19	4.35	.760
SCAT 1B-Total	19	47.31	(16)		6.33	1.49	
Survey of Language Achievement[1/]							
English	19	70.63	(21)	(10.6)	8.03		
Spelling	19	17.36	(34)	(11.4)	4.34		
Cooperative English Test, Reading Comprehension							
Vocabulary	19	18.21	(13)		4.23		
Level	19	12.63	(11)		2.25		
Speed	19	15.63	(9)		4.20		

1/ Percentile and Grade Placement Norms--Twelfth Grade, Publisher

TABLE 12

Pre-and Post-Test Results and End-Of-Course Test Results for Group IV (Math 1)

Fall Semester, 1967

Test	N	Mean	(%ile)	(Gr. Pl.)	SD	SEm	Diff
SCAT 1A-Verbal	21	24.71	(28)		4.34	.97	
							2.19*
SCAT 1B-Verbal	21	22.52	(28)		7.71	1.72	
SCAT 1A-Quantitative	21	16.43	(10)		9.11	2.03	
							11.75*
SCAT 1B-Quantitative	21	29.24	(31)		6.68	1.49	
SCAT 1A-Total	21	40.85	(18)		9.78	2.18	
							7.79
SCAT 1B-Total	21	51.76	(32)		11.33	2.53	
California Mathematics Test (Adv.)[1/]							
Mathematics	21	31.14	(12)	(8.7)	7.46		
A. Meanings	21	10.38		(8.5)	2.98		
B. Symbols, Rules & Equations	21	13.29		(8.6)	3.93		
C. Problems	21	7.48		(8.5)	3.06		
Mathematics Fundamentals	21	59.19	(38)	(11.8)	9.93		
D. Addition	21	15.62		(11.6)	2.66		
E. Subtraction	21	15.24		(11.0)	2.99		
F. Multiplication	21	14.48		(11.1)	2.92		
G. Division	21	13.85		(11.1)	3.92		
Total Mathematics	21	90.33	(24)	(10.5)	15.69		

1/ Percentile and Grade Placement Norms--Twelfth Grade, Publisher

* Sig. at .05 level of confidence
** Sig. at .01 level of confidence

TABLE 13

Pre-and Post-Test Results and End-Of-Course Test Results for Group V (English 1 and English 2)

Fall Semester, 1967

Test	N	Mean	(%ile)	(Gr. Pl.)	SD	SEm	Diff.
SCAT 1A-Verbal	80	14.84	(6)		2.78	.31	
							4.370**
SCAT 1B-Verbal	80	15.46	(8)		4.13	.46	
SCAT 1A-Quantitative	80	28.51	(35)		7.41	.83	
							10.688**
SCAT 1B-Quantitative	80	30.50	(39)		6.44	.72	
SCAT 1A-Total	80	43.16	(21)		8.40	.94	
							11.470**
SCAT 1B-Total	80	45.96	(24)		8.78	.98	
Survey of Language Achievement[1/]							
English	80	70.29	(18)	(10.4)	8.04		
Spelling	80	18.34	(42)	(12.0)	4.02		
Cooperative English Test, Reading Comprehension							
Vocabulary	80	19.69	(17)		4.71		
Level	80	13.01	(11)		3.33		
Speed	80	17.69	(12)		5.35		

1/ Percentile and Grade Placement Norms--Twelfth Grade, Publisher

** Sig. at .01 level of confidence

TABLE 14

Pre-and Post-Test Results and End-Of-Course Test Results for Foreign Students

Fall Semester, 1967

Test	N	Mean	(%ile)	(Gr. Pl.)	SD	SEm	Diff.
SCAT 1A-Verbal	22	13.77	(4)		4.71	1.02	.169
SCAT 1B-Verbal	22	13.59	(7)		4.49	.97	
SCAT 1A-Quantitative	22	21.64	(17)		9.65	2.11	3.527**
SCAT 1B-Quantitative	22	27.00	(23)		8.88	1.94	
SCAT 1A-Total	22	37.50	(9)		7.05	1.53	3.458**
SCAT 1B-Total	22	44.59	(16)		9.15	1.99	
Survey of Language Achievement[1/]							
English	19	64.40	(16)	(9.3)	12.38		
Spelling	19	12.79	(8)	(9.2)	5.25		
Cooperative English Test, Reading Comprehension							
Vocabulary	19	17.53	(13)		5.52		
Level	19	11.26	(6)		2.79		
Speed	19	13.68	(6)		3.95		

1/ Percentile and Grade Placement Norms--Twelfth Grade, Publisher

** Sig. at .01 level of confidence

An attempt was made to relate pre- and post-test measures of ability and the various measures of achievement. Tables 15-20 summarize the correlations by instructional groups. The data must be considered within the restrictions of the "n's" and the range of scores. Only partial answers were sought to such questions as, the effects of remedial instruction on ability measures used for placement and differences in kind of achievement gain.

Group I, it will be recalled, received intensive remedial work in language, having two courses for a total of ten hours per week for one semester. Group V received the same instructional time. The groups appeared similar in initial verbal ability (Tables 9 and 13) but differed in quantitative ability. Inspection of Tables 15 and 19 reveals a tentative trend, perhaps expected, toward less correlation between measures of scholastic ability (or less reliability) after instruction and greater correlation between measures of achievement in probable areas of curriculum emphasis and the post-test measure or measures of ability. For example, note in Table 19 that Group V (having no remedial or regular math as a group--though, as seen in Table 7, 22 of the 80 students in the group were enrolled in a mathematics course) the quantitative correlation was r=,72, as compared to r=.34 for Group I (having mathematics instruction), Table 15. Note also in Table 15 the rather large differences between achievement measure correlation between the pre- and post-test measures of quantitative ability. The pattern seems applicable also to Groups II and III, Tables 16 and 17.

An exception to the above seems to be present when Groups I and IV--both having mathematics--are inspected. In the case of Group IV the correlation after instruction for the quantitative scores is extremely high, r=.87.

Admittedly, the data in Tables 15-20 are subject to large error but they tend to confirm the reliability of the placement procedures (SCAT) currently used. And, the data shed some possible light on independent determination of curriculum emphasis.

TABLE 15

Correlations: Group I (English 1, English 2, Math 1)

Fall Semester, 1967
N=18

Test	SCAT 1A Verbal	SCAT 1A Quantitative	SCAT 1A Total	SCAT 1B Verbal	SCAT 1B Quantitative	SCAT 1B Tota
SCAT 1A-Verbal				.58		
SCAT 1A-Quantitative					.34	
SCAT 1A-Total						.56
Survey of Language Achievement						
English	.42			.77		
Spelling	.21			.12		
Cooperative English Test, Reading Comprehension						
Vocabulary	.20			.27		
Level	.24			.11		
Speed	.36			.13		
California Mathematics Test (Adv.)						
Mathematics Reasoning		.21			.71	
A. Meanings		.16			.40	
B. Symbols, Rules & Equations		.29			.37	
C. Problems		.24			.62	
Mathematics Fundamentals		.43			.69	
D. Addition		.39			.28	
E. Subtraction		.46			.66	
F. Multiplication		.15			.45	
G. Division		.31			.71	
Total Mathematics		.41			.79	

TABLE 16

Correlations: Group II (English 1)

Fall Semester, 1967
N=51

Test	SCAT 1A Verbal	SCAT 1A Quantitative	SCAT 1A Total	SCAT 1B Verbal	SCAT 1B Quantitative	SCAT 1B Tota
SCAT 1A-Verbal				.52		
SCAT 1A-Quantitative					.82	
SCAT 1A-Total						.80
Survey of Language Achievement						
English	.57			.46		
Spelling	.32			.30		
Cooperative English Test, Reading Comprehension						
Vocabulary	.45			.45		
Level	.37			.38		
Speed	.31			.44		

TABLE 17

Correlations: Group III (English 2)

Fall Semester, 1967
N=19

Test	SCAT 1A Verbal	SCAT 1A Quantitative	SCAT 1A Total	SCAT 1B Verbal	SCAT 1B Quantitative	SCAT 1B Total
SCAT 1A-Verbal				.31		
SCAT 1A-Quantitative					.58	
SCAT 1A-Total						.33
Survey of Language Achievement						
English	.58			.31		
Spelling	.68			.25		
Cooperative English Test, Reading Comprehension						
Vocabulary	.62			.55		
Level	.20			.51		
Speed	.10			.34		

TABLE 18

Correlations: Group IV (Math 1)

Fall Semester, 1967
N=21

Test	SCAT 1A			SCAT 1B		
	Verbal	Quantitative	Total	Verbal	Quantitative	Total
SCAT 1A-Verbal				.87		
SCAT 1A-Quantitative					.85	
SCAT 1A-Total						.82
California Mathematics Test (Adv.)						
Mathematics Reasoning		.66			.75	
A. Meanings		.60			.69	
B. Symbols, Rules & Equations		.27			.49	
C. Problems		.66			.67	
Mathematics Fundamentals		.63			.74	
D. Addition		.60			.74	
E. Subtraction		.54			.71	
F. Multiplication		.50			.62	
G. Division		.42			.36	
Total Mathematics		.71			.82	

TABLE 19

Correlations: Group V (English 1 and English 2)

Fall Semester, 1967
N=80

Test	SCAT 1A Verbal	SCAT 1A Quantitative	SCAT 1A Total	SCAT 1B Verbal	SCAT 1B Quantitative	SCAT 1B Tota
SCAT 1A-Verbal				.39		
SCAT 1A-Quantitative					.72	
SCAT 1A-Total						.68
Survey of Language Achievement						
English	.31			.25		
Spelling	.33			.36		
Cooperative English, Reading Comprehension						
Vocabulary	.27			.48		
Level	.26			.29		
Speed	.25			.57		

TABLE 20

Correlations: Foreign Students

Fall Semester, 1967

Test	N	SCAT 1A Verbal	SCAT 1A Quantitative	SCAT 1A Total	SCAT 1B Verbal	SCAT 1B Quantitative	SCAT 1B Total
SCAT 1A-Verbal	22				.43		
SCAT 1A-Quantitative	22					.72	
SCAT 1A-Total	22						.35
Survey of Language Achievement							
English	19	.06			.43		
Spelling	19	.14			.50		
Cooperative English Test, Reading Comprehension							
Vocabulary	19	.60			.59		
Level	19	.34			.30		
Speed	19	.09			.30		

Tables 21 and 22 are presented to, first, estimate comparability of the groups receiving remedial language arts instruction and, second, provide evaluative data bearing on the justification for "separate" English courses established to give emphasis in particular language arts areas.

Table 21 would appear to confirm the comparability of the study groups before and after differential instruction. It would seem to make no difference whether the groups were exposed to one, two, or a combination of two language arts courses in the Basic Skills Program, Fall, 1967, when a general measure of verbal ability is used as the criterion. There is some reason to conclude that students in the lower range of ability gain little from the curriculum and instruction aimed to prepare them for "advanced" courses. There is no doubt but that some individuals profited greatly, but there is question whether the majority generally fulfilled the objective of the course or courses. There is a strong indication, certainly in this situation, that the instructional approaches were uneconomical educationally and financially.

The data in Table 22 suggest rather strongly, it seems, that the end product of courses labeled "English 1--English Fundamentals or English 2--Developmental Reading" was limited to some accomplishment in the relatively non-conceptualized language arts areas--grammar, punctuation, and spelling. There was, apparently, no appreciable gain in higher-level areas of functional reading and vocabulary.

The evidence presented in Tables 21 and 22 is, of course, subject to criticism, but it does suggest that for students in the lower range of academic ability other strategies must be employed, e.g. clinical analysis, tutoring, or that they have reached--for the most part--a language arts educational ceiling. Instruction in communication should perhaps be focused on practical application with particular concern to the demands of appropriate occupations rather than those of "general education."

Comparison of the groups, I and IV, receiving mathematics instruction was inconclusive.

TABLE 21

MEANS, STANDARD DEVIATIONS, CORRELATIONS AND ANALYSES OF VARIANCE OF BASIC SKILLS STUDENTS IN ENGLISH 1 AND ENGLISH 2

		I Pre-Test SCAT-1A Verbal		II Post-Test SCAT-1B Verbal		
Group	N	Mean	SD	Mean	SD	r
I	18	14.05	2.84	14.27	5.12	.58
II	51	14.18	3.95	16.18	4.59	.52
III	19	15.26	6.64	15.68	3.74	.31
V	80	14.84	2.78	15.46	4.13	.39

I. Analysis of Variance for SCAT-1A Verbal

Source of Variation	Sum of Squares	df	Mean Square	F
Between Sets	4,842.85	3	1,614.28	2.08
Within Sets	12,731.15	164	776.29	
Total	17,574.00	167		

II. Analysis of Variance for SCAT-1B Verbal

Source of Variation	Sum of Squares	df	Mean Square	F
Between Sets	-103.17	3	-34.39	-1.72
Within Sets	3,332.17	164	19.95	
Total	3,229.00	167		

TABLE 22

ANALYSES OF VARIANCE FOR END-OF-SEMESTER LANGUAGE ACHIEVEMENT TESTS

Test	Source of Variation	Sum of Squares	df	Mean Square	F
Survey of Language Achievement					
English	Between Sets	1,511	3	503.66	5.60**
	Within Sets	14,746	164		
	Total	16,257	167	89.91	
Spelling	Between Sets	246.46	3	82.15	3.97**
	Within Sets	3,393.82	164	20.69	
	Total	3,640.28	167		
Cooperative English Test, Reading Comprehension					
Vocabulary	Between Sets	39.69	3	13.23	.55
	Within Sets	3,925.31	164	23.93	
	Total	3,965.00	167		
Level of Comprehension	Between Sets	18.74	3	6.25	.62
	Within Sets	1,664.67	164	10.15	
	Total	1,683.41	167		
Speed of Comprehension	Between Sets	86.19	3	28.73	1.04
	Within Sets	4,534.81	164	27.65	
	Total	4,621.00	167		

**Significant at the .01 level of confidence.

Tables 23-28 summarize the academic performance of the study groups at the end of their second semester. Inspection of the data by the instructional groups does not indicate, generally that the remedial instruction received during the first semester materially improved the regular course performance of the students. Admittedly, the data to support this conclusion are not the most precise but they are highly suggestive. For example, it is estimated that only 66 or 34 percent of the original study group of 193 achieved a grade of "C" or better in the regular courses (English 20 and Math 20) for which remedial preparation was designed by the end of the second semester.

Table 29 is introduced here as partial evidence that the students for whom remedial instruction was designed probably had long-standing deficiencies in basic communication and mathematical skills. Efforts made at the post-high school or junior college level to correct these deficiencies were probably pre-destined to marginal success, to say the least, particularly if they were based on the usual group instructional techniques and the use of conventional material. Other strategies seem necessary.

TABLE 23

Course Performance and Grade Point Average, Basic Skills:
Group I (English 1, English 2, Math 1)

Spring Semester, 1968

N = 14

Courses	N	A N	A %	B N	B %	C N	C %	D N	D %	F N	F %	W N	W %	Mean GPA
English 20	7					1	14	2	29	3	43	1	14	.7
1	6					1	17	2	33	2	50			.7
2	2					1	50					1	50	2.0
Math 20	6							2	33	3	50	1	17	.4
1	5					2	40			2	40	1	20	1.0
Accounting 20	5							4	80	1	20			.8
Bus. Mach. 20	12					8	66	3	25			1	9	1.7
Gen. Bus. 20	1									1	100			---
21	1											1	100	---
Off. Prac. 20	6							2	33	4	67			.3
25	2					1	50			1	50			---
Shorthand 20	2			1	50					1	50			1.5
Speech 20	1			1	100									3.0
25	5					4	80	1	20					1.8
Typing 20	1					1	100							2.0
21	9					2	22	5	56			2	22	1.3
	71	0	0	2	3	21	30	21	30	19	26	8	11	

TABLE 24

Course Performance and Grade Point Average, Basic Skills
Group II (English 1)

Spring Semester, 1968
N = 47

Courses		N	A N	A %	B N	B %	C N	C %	D N	D %	F N	F %	W N	W %	Mean GPA
English	20	33			6	18	10	30	10	30	3	9	4	13	1.6
	1	2					2	100							2.0
	2	13			8	63	4	30	1	7					2.5
Math	20	17			1	7	3	18	7	39	3	18	3	18	1.0
	1	4	1	25	2	50	1	25							3.5
Accounting	20	5							4	80	1	20			.8
	25	3					2	67			1	33			1.3
	30	2					2	100							2.0
	41	1									1	100			---
Bus. Mach.	20	8					6	75	1	12			1	15	1.8
	21	3			1	33			2	67					1.7
BDP	20	1			1	100									3.0
	21	1					1	100							2.0
Gen. Bus.	20	2					2	100							2.0
	21	3					1	33	1	33			1	33	1.0
H & R	22	11			4	37	3	27			1	9	3	27	2.2
	30	9	1	11	4	45	2	22					2	22	2.5
	31	7			4	47	2	29			1	14			2.3
	32	1					1	100							2.0
	41	5			3	60	2	40							2.6
Humanities	20	4					3	75					1	25	2.0
Off. Prac.	20	9			2	22	5	56	2	22					2.0
	25	3	1	33	2	67									2.3
Shorthand	20	3							1	33	1	33	1	33	.5
Soc. Sci.	20	7	2	29	5	71									3.3
	25	6			1	16	3	50	1	17			1	17	2.0
	30	4					3	75			1	25			1.5
	31	2					1	50					1	50	2.0
Speech	20	3	1	33	2	67									3.3
	25	3					3	100							2.0
Typing	20	1					1	100							2.0
	21	9			1	11	4	45	3	33	1	11			1.4
	22	8			1	13	2	25	4	50			1	12	1.6
	25	1					1	100							2.0
		194	5	3	47	24	72	37	37	19	14	7	19	10	

TABLE 25

Course Performance and Grade Point Average, Basic Skills: Group III (English 2)

Spring Semester, 1968
N = 17

Courses	N	A N	A %	B N	B %	C N	C %	D N	D %	F N	F %	W N	W %	Mean GPA
English 20	6	1	17	1	17	3	50			1	17			2.1
21	1					1	100							2.0
1	10			3	30	5	50	1	10			1	10	2.0
2	1									1	100			---
Math 20	13	1	7	3	19	2	15	4	30	2	15	1	17	1.9
Accounting 20	2					2	100							2.0
24	2			1	50			1	50					2.0
25	5					3	60	1	20	1	20			1.4
30	3			2	67	1	33							2.7
Bus. Mach. 20	6	3	50	1	16	1	17	1	17					3.0
BDP 21	1			1	100									3.0
31	1	1	100											4.0
41	1					1	100							2.0
Gen. Bus. 20	1							1	100					1.0
21	3			1	33	2	67							2.3
H & R 22	1					1	100							2.0
30	1			1	100	1	100							3.0
Off. Prac. 20	3			1	33			1	33	1	33			1.3
Shorthand 20	2							1	50	1	50			.5
21	1	1	100											4.0
22	1	1	100											4.0
Soc. Sci. 20	2	1	50	1	50									3.5
30	1					1	100							2.0
37	1					1	100							2.0
40	1					1	100							2.0
Speech 25	1					1	100							2.0
Typing 20	4	3	75									1	25	3.7
21	1					1	100							2.0
22	4	1	25			3	75							2.5
SM 25	1			1	100									3.0
26	1					1	100							2.0
	82	13	16	17	21	31	38	11	13	7	9	3	3	

TABLE 26
Course Performance and Grade Point Average, Basic Skills:
Group IV (Math 1)

Spring Semester, 1968
N = 20

Courses	N	A N	A %	B N	B %	C N	C %	D N	D %	F N	F %	W N	W %	Mean GPA
English 20	5			1	20	1	20			1	20	2	40	1.7
21	7					5	71	1	14			1	15	1.8
Math 20	14			1	7	2	14	5	37	2	14	4	28	1.4
1	1					1	100							2.0
Accounting 20	3			1	33	1	33	1	33					2.0
24	2			1	50			1	50					2.0
Bus. Mach. 20	5	1	20	2	40	2	40							1.8
Dent. Asst. 21	3					3	100							2.0
22	3	1	33	2	67									3.5
Gen. Bus. 21	1					1	100							2.0
45	1											1	100	---
H & R 22	3					2	67					1	33	2.0
30	1					1	100							2.0
32	1					1	100							2.0
41	1			1	100									3.0
Humanities 20	1											1	100	---
Off. Prac. 20	7					3	43	2	29			2	28	1.6
25	2			1	50			1	50					2.0
Shorthand 20	1											1	100	---
21	1									1	100			---
22	1			1	100									3.0
Soc. Sci. 20	1							1	100					1.0
30	2					2	100							2.0
31	1							1	100					1.0
Speech 20	4	3	75	1	25									3.5
25	2					1	50			1	50			1.0
Typing 20	2	1	50	1	50									3.5
21	6					4	67					2	33	2.0
22	3			1	33	1	33	1	33					2.0
	85	6	7	14	16	31	37	14	16	5	6	15	18	

TABLE 27

Course Performance and Grade Point Average, Basic Skills: Group V (English 1 and English 2)

Spring Semester, 1968
N = 77

Courses		N	A N	A %	B N	B %	C N	C %	D N	D %	F N	F %	W N	W %	Mean GPA
English	20	57	1	2	11	16	30	45	12	18	5	8	8	11	
	1	5					3	60	1	20			1	20	1.7
	2	1							1	100					1.0
Math	20	40			6	15	12	30	11	28	5	12	6	15	1.5
	1	6	1	16			2	33			2	33	1	16	1.6
	30												1	100	---
Accounting	20	17			2	11	8	47	3	17	2	11	2	11	1.7
	21				1	25	1	25	1	25	1	25			
	24	7			2	29	4	47			1	14			2.0
	25	10					3	30	3	30	3	30	1	10	1.3
	30	6					3	50	2	33			1	17	1.6
	41	1							1	100					1.0
Bus. Mach.	20	39	6	17	13	33	14	35	2	5			4	10	2.7
BDP	20	1			1	100									3.0
	21	1			1	100									3.0
Gen. Bus.	20	1					1	100							2.0
	21	16			2	12	8	50	2	12	2	12	2	12	1.7
H & R	32	1											1	100	---
Humanities	20	1									1	100			---
	25	2					1	50					1	50	2.0
Off. Prac.	20	18			2	11	5	27	6	33	1	11	4	18	1.6
	25	9			3	33	2	22	3	33			1	11	2.0
	50	2			1	50			1	50					2.0
Shorthand	20	12	3	25	1	8	3	25	1	8	3	25	1	9	2.0
	21	9	1	11	1	11	3	33	1	11	3	34			1.5
	22	2			1	50			1	50					2.0
Soc. Sci.	20	4	4	100											4.0
	30	1											1	100	---
	31	1									1	100			---
	40	1							1	100					1.0
Speech	20	15	2	13	3	20	3	20					7	47	3.0
	25	19	2	10	1	5	9	48	3	16	3	16	1	5	1.6
Typing	20	8	2	25	2	25	2	25					2	25	3.0
	21	28			3	10	11	39	8	28	2	8	4	15	1.6
	22	21	4	19	5	24	7	33	3	15			2	9	2.5
SM	25	1											1	100	---
			26	7	61	16	134	37	65	17	34	9	52	14	

TABLE 28

High School English and Mathematics Grade Point Averages for Basic Skills Students in Evaluation Groups

Spring Semester, 1968

Group		English GPA by Grade								Mathematics GPA by Grade							
		9		10		11		12		9		10		11		12	
	N	N	GPA	N	GPA	N	GPA	N	GPA	N	GPA	N	GPA	N	GPA	N	GPA
I	14	14	1.6	14	2.1	14	1.7	14	1.9	14	1.6	10	1.6	5	1.4	2	1.5
II	47	38	2.0	38	1.9	38	1.8	37	2.0								
III	17	15	2.1	15	2.1	15	2.1	15	2.1								
IV	20									13	2.2	13	1.6	3	1.7	4	1.7
V	77	69	2.1	69	2.2	70	2.0	70	2.0								
VI	2	3	1.6	3	2.0	3	1.6	3	1.6	3	1.3	3	1.0	3	1.0		

NOTE: Available data for students continuing during Spring, 1968. -- difference in n's because of missing transcripts.

SUMMARY AND CONCLUSIONS

The Basic Skills Program, initiated in Fall, 1967, was structured to provide remedial instruction in language arts and mathematics to about one-third of the entering students whose estimated ability in these areas was estimated to be extremely deficient. The major objective of the program was to: "prepare the student for enrollment in a regular course."

In cooperation with the Mathematics and Language Arts Departments, staff of the Student Services Center conducted an evaluation of the Program. The objectives of the evaluation were to secure and analyze data relative to student course performance and measured achievement and to study the usefulness of the placement criteria. The evaluation sought to support continuation or modification of the Basic Skills Program.

The following conclusions seem warranted:

1. Inadequacies in student accounting seriously handicap curriculum study and the conduct of needed research.

2. Curriculum choices of students in the lower ability range are unrealistic. Significantly increased orientation and guidance are indicated.

3. The performance of foreign students indicates probable long-term remediation particularly in communication skills, as might be expected.

4. The major objective of the Basic Skills Program, to prepare students for regular courses, was not attained for the majority of the students in the program. Skill deficiencies appear to be a long-standing and only partially correctible within a short period of remedial instruction when conventional methods are used.

5. The Basic Skills Program is of doubtful value both educationally and economically. Resources may well be directed toward clinical analysis. increased individualized instruction, and consultation and assistance to occupational instructors.

6. The placement criteria appear to be valid.

7. To accommodate a fairly large number of students, there is need for sharply defined vocational-technical training programs of short duration--one term or less--based on thorough job analysis of occupational areas which would require minimum communication and mathematics skills.

   Some students in these programs may progress rapidly, e.g. the "late bloomers" and older students who have been out of school. Provision should be made for such students to transfer into more suitable curricula as they may desire.

8. Curriculum study should be continuous as an aid to better use of resources both educational and financial. Special "programs" demand special consideration.